

Strand

LIVING THINGS

Strand unit

Plant and animal life

Objective

- become familiar with the characteristics of some major groups of living things (e.g. fungi)

Working scientifically

- Questioning
- Observing
- Predicting
- Investigating and experimenting
- Analysing (sorting, classifying and interpreting)
- Recording and communicating

Background information

Mushrooms are a fungus. They consist of a mass of threads just like the mould that grows on bread. It is these threads that provide the fungi with food. Underneath a mushroom are spore cases, each containing hundreds of tiny spores. Spores are carried by the wind and attach themselves to sources of food. Fungi were once classified as plants until it was discovered that they did not have the ingredient that allows plants to make their own food – chlorophyll – which is needed for photosynthesis.

Mould is a type of fungus. Bread mould (known as *Rhizopus*) is a common type of fungus.

Safety warning

Pupils may be allergic to mushroom spores, so keep all mouldy foods in containers or snaplock bags.

- Never breathe in spores.
- Wash your hands every time you touch a mould.
- Plastic containers that have been exposed to moulds must be thrown away.

Before the lesson

Materials needed

- Mushrooms (enough for one per pair), white paper, shoe box (or any other box that will stop the spores from being blown away).
- Four slices of bread per group, four snaplock bags per group, tongs. (White bread will work best as it has more sugars in it and the mould will be seen clearly).

Preparation

- Allocate time the day before the science lesson to complete the first part of the activity, using the mushrooms. The pupils work in pairs and pull the stalk off of a mushroom, placing the cap the right side up on white paper. The paper is covered by a shoe box or anything else that will stop draughts.
- Before the science lesson, organise an area where the pupils can keep their experiment. It is important that the bags of bread are not opened (see safety note), so a corner of the classroom can be used if the pupils are aware that they must not interfere with the materials. Placing the bread on a trolley would be ideal as it could be wheeled into the classroom for viewing.

The lesson

Stimulus

- In their pairs from the previous day, the pupils take the box away from the experiment and remove the mushroom cap from the paper. Look underneath the cap of the mushroom at the tiny threads. Focus on the spore cases that are left on the paper. What are they and how are they used? (See Background information and Safety warning).
- Reinforce that mushrooms are a fungus and explain that moulds are also a fungus.

What to do

- Pupils will be working in groups of four for the bread experiment.
Note: Before the lesson, ask one pupil from each group to refrain from washing their hands after play or lunchtime. Stress that they should keep their hands away from their mouths until they are washed.
- Inform the pupils that they are going to grow mould on bread. Stress that moulds can be seen but the micro-organisms that cause the food to go off may not be seen. It is these micro-organisms (spores) that should not be touched, smelt or tasted.
- Distribute the materials to each group. Distribute the sticky labels. The pupils label the snaplock bags with either a number or with the terms and their group names.
 - clean hands (1)
 - dirty hands (2)
 - tongs (3)
 - dirty floor (4)
- The pupil who has not washed his or her hands will place the bread into the snaplock bag (gently wiping both hands on the bread). He/She can then go and wash his/her hands with soap.
- Another group member washes his or her hands with soap first and then places the bread into the bag.
- The third pupil will place the bread into the bag using the tongs.
- Finally, the last member of the group will find a section of the floor that looks dirty (not carpeted) and wipe the bread on the floor before placing it into the bag.
- Discuss and predict which piece of bread will grow the most mould.
- Leave the bread for three or four days. The pupils will observe the bread after this time (without taking it out of the bag) and complete the results section of the copymaster. Discuss and compare the results with their predictions.

After the lesson

Answers

1. Answers will vary.
2. Teacher check

Additional activities

- Research materials that decay and decompose. Investigate biodegradable plastics that do decay.
- In pairs, discuss the argument about mothers using disposable or washable nappies. Survey family members. Write and present a debate.
- Create a poster about mushrooms. Find pictures of different types of mushrooms in books or on the Internet. Draw or stick them to the poster.

Display ideas

- Take photographs of the mouldy bread through the bags. Display the photographs with pupil text that explains how the investigation was conducted.

Fungi

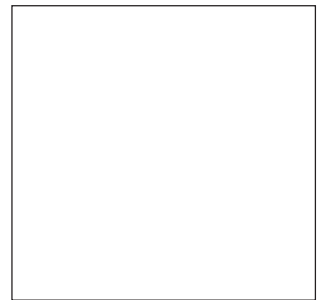
Mushrooms

Mushrooms are a fungus. This means that they live directly off whatever they are growing on. Most mushrooms live off decaying or living plants.

- 1** – Collect your mushroom.
- Pull off the stalk.
- Place the cap of the mushroom the right side up on a sheet of white paper.
- Cover the mushroom with a box to stop any draughts.



(a) Draw what is left on the paper.

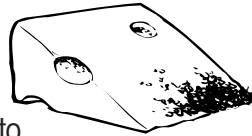


The next day :

- Remove the box and the mushroom cap.

Mould

Mould is also a fungus. It rests on food, absorbing it to grow and multiply.



(b) Discuss what is left on the paper with your group.

Safety
Do not open the sealed bags!
Moulds can be harmful if touched, tasted or smelt.

Have you ever seen mould on food at home? Perhaps you went away on holiday and left food in the fridge, or food was left out in the kitchen for too long.

- 2** (a) Discuss with your group the kind of foods you have seen mould growing on. Write a list.

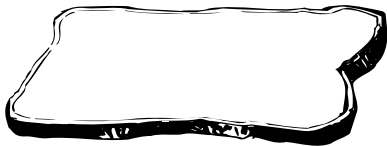
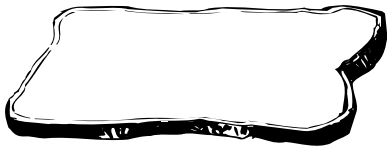
- (b) Predict which bread will have the most mould growing on it after three days. Write a number from 1 to 4, with 1 being the bread with the most mould.

- Placed in a bag using clean hands.
- Placed in a bag using dirty hands.
- Placed in a bag after wiping over dirty floor.
- Placed in a bag using tongs.

(c) Complete the bread pictures below to show the results of your experiment.

(d) Discuss the results with your group. Write your thoughts below.



Placed in a bag using clean hands.	Placed in a bag using dirty hands.
	
Placed in a bag after wiping over dirty floor.	Placed in a bag using tongs.
